

REMARKS

Claims 1, 3, 5, 7 and 10-13 presently are pending in the application. Claims 2, 4, 6, 8 and 9 have been canceled and claims 10-13 newly added. Reconsideration and allowance of all the claims are respectfully requested in view of the following remarks.

Applicant thanks the Examiner for acknowledging receipt of the certified copy of the priority documents.

Claims 1-9 inclusive were rejected under 35 U.S.C. § 103(a) as being unpatentable over Leckey et al. (previously applied) in view of the newly cited U.S. Patent No. 5,154,003 (Moore). For the following reasons, this rejection is respectfully traversed.

The Examiner recognizes that Leckey fails to disclose a displacement amount moving device wherein the two arms are connected at first ends with a hinge. However, the Examiner now applies the secondary teaching of Moore to make up for this deficiency.

More specifically, the Examiner maintains that Moore discloses a peripheral surface shape measuring apparatus (50) of a roll-like object which measures a peripheral surface shape of a roll-like object, including a pinching device having two arms (12, 14) connected together at first end portions with a hinge (16) and that pinch the roll-like object in a diameter direction of the roll-like object (referencing Figs. 3A, B) with a sensor part (72) and a reference point part (74) arranged opposite to each other in second end portions (71, 73) of the two arms. The Examiner further maintains that the displacement amount is measured when the sensor part is relatively displaced in the diameter direction with respect to the reference point part (referencing column 9, lines 11-68). The Examiner still further maintains that a moving device (70) is

disclosed wherein the peripheral surface shape of the roll-like object is measured on the basis of the displacement amount of the sensor part accompanied by movement of the displacement amount measuring device (referencing column 10, line 23 - column 11, line 9 and Fig. 5D).

The Examiner concludes that it would have been obvious to one of ordinary skill in the art to modify the peripheral surface shape measuring device of Leckey to replace the connection of the first ends the two arms with a hinge, as taught by Moore, so that objects of various diameters would be easily measured (referencing Moore, column 2, lines 25-52).

Regarding dependent claim 5 and independent claim 9, which relate to the feature of the contact positions to the roll peripheral surface of the sensor part and the reference point part which pinch the roll-like object being within a range of ± 5 mm with respect to the diameter direction in a plane perpendicular to the diameter direction, the Examiner recognizes that neither Leckey nor Moore teaches or suggests the particular value for this parameter. However, the Examiner alleges that it would have been obvious to one of ordinary skill to provide a measurement device with an accuracy of ± 5 mm, since it has been held that where general conditions of a claim are disclosed in the prior art, discovering the "optimum range" involves only routine skill in the art [citation omitted].

The teachings of Leckey were discussed at great length in the previous Amendment dated March 10, 2003 (see pages 6 and 7 thereof). The newly cited reference to Moore, on the other hand, relates to a pivoted-arm caliper for measuring a wide range of diameters. In particular, Moore discloses a caliper which not only uses a two-point technique wherein the free ends of the arms simultaneously contact two diametrically opposed points on the surface of the object (see,

object (see, for example, Fig. 3B), but also one which is capable of measuring diameters without contacting diametrically opposed points on the surface of the object.

However, Moore's pivoted-arm caliper is not designed to be moved in an axial direction of the roll-like object to be measured. Rather, the element referred to by the Examiner as a moving device, i.e., roller 70, is rotatably mounted to the arm 14 and designed to rotate when in contact with the surface of a rotating object so that the caliper 50 may take measurements while the object is rotating without damaging the object. Accordingly, one of ordinary skill in the art would not have modified Leckey to permit both a hinge type movement of the two arms together with axial movement of the displacement amount measuring device, absent Applicant's own teaching as a guide.

With respect to dependent claim 5 and independent claim 9, as noted above, the Examiner asserts that the accuracy of the diameter measurement would have been obvious based on "only routine skill in the art". However, "[a] particular parameter must first be recognized as a result-effective variable ... before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation." MPEP § 2144.05(b). The grounds of rejection do not address this threshold inquiry at all. Indeed, none of the art being relied upon appears to indicate that the particular claimed contact positions to the roll peripheral surface of the sensor part and the reference point part which pinch the roll-like object are within the range of ± 5 mm with respect to the diameter direction in a plane perpendicular to the diameter direction (see the direction L as best shown in Fig. 2 of the subject application) have been recognized as being result-effective variables.

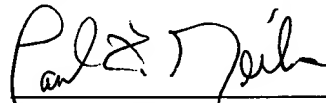
AMENDMENT UNDER 37 C.F.R. § 1.114(c)
U.S. Patent Application No. 09/993,762

Moreover, claim 1 has been amended and new claims 10-13 added to define the invention more clearly.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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